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## Spiders of the Genus *Clubiona* (Araneae, Clubionidae) from Eastern Hokkaido, Japan<sup>1)</sup>

By

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小野 展嗣\*: 北海道東部から得られたフクログモ属 (クモ目フクログモ科) のクモ類

In the course of the "Synthetic Research on the Natural History of the Japanese Islands" made by the National Science Museum, Tokyo, the author conducted a research trip to eastern Hokkaido in September 1992 in order to collect spiders. The field survey was, however, unexpectedly interrupted by heavy rain caused by a typhoon and the collections were unsatisfactory for faunistic and zoogeographical studies.

In the present paper, the result of taxonomical study on the spiders belonging to the genus *Clubiona* LATREILLE, 1804, Clubionidae, from the eastern part of Hokkaido will be reported. The specimens obtained were classified into six species including *Clubiona uenoi* ONO, 1986, newly recorded from Hokkaido, and a new species to be described herein. The new species has hitherto been wrongly identified with *Clubiona propinqua* L. KOCH, 1879, or *C. pseudogermanica* SCHENKEL, 1936 (MATSUDA, 1985; HAYASHI, 1987; MIKHAILOV, 1991; and others).

The type specimens of the new species are deposited in the collection of the National Science Museum, Tokyo.

The author wishes to express his sincere thanks to Dr. Shun-Ichi UENO, Tokyo, for critically reading the manuscript of this paper and to Mr. Eiichi SHINKAI for kind collaboration in the field. Many thanks are due to Dr. Joon NAMKUNG and Dr. Joo Pil KIM, Seoul, Mr. Ken-ichi KUMADA, Kanagawa, Mrs. Mayumi MATSUDA, Hokkaido, Mr. Kouichi NOJIMA and Mr. Yoh IHARA, Okayama, Mr. Kiyoto OGATA, Aichi, Mr. Seiji MATSUMOTO, Tokyo, and Mr. Nobuki YASUDA, Hokkaido, for offering specimens and for kind advice.

Family Clubionidae

Genus *Clubiona* LATREILLE, 1804*Clubiona kurilensis* BÖSENBERG et STRAND, 1906

*Specimen examined.* 1♂, Yunosawa-machi, 130 m alt., Shiretoko Peninsula, E. Hokkaido, Japan, 9-IX-1992, H. ONO & E. SHINKAI leg. (NSMT-Ar 3051).

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*Clubiona uenoi* ONO, 1986

**Specimens examined.** 1♂, Yunosawa-machi, 100 m alt., Shiretoko Peninsula, E. Hokkaido, Japan, 9-IX-1992, H. ONO & E. SHINKAI leg. (NSMT-Ar 3052); 1♀, Ponnupuri-sanmakutsubetsu-gawa River, 260 m alt., Teshikaga-chô, E. Hokkaido, Japan, 5-IX-1992, H. ONO leg. (NSMT-Ar 3053).

**Remarks.** This species is newly recorded from Hokkaido. Its distribution hitherto known was only Honshu (Ishikawa and Gunma Prefectures).

*Clubiona kunashirensis* MIKHAILOV, 1990

**Specimen examined.** 1♂, Notoro-misaki, 0-30 m alt., Abashiri-shi, E. Hokkaido, Japan, 6-IX-1992, H. ONO leg. (NSMT-Ar 3054).

**Remarks.** This is a fifth record of this species in Japan. All these records were made in Hokkaido (ONO *et al.*, 1991).

*Clubiona yagata* YAGINUMA, 1979

**Specimens examined.** 2♀, Shiretoko-tôge, 600 m alt., Shiretoko Peninsula, E. Hokkaido, Japan, 10-IX-1992, H. ONO & E. SHINKAI leg. (NSMT-Ar 3055).

*Clubiona ezoensis* HAYASHI, 1987

**Specimens examined.** 1♀1♂, Yunosawa-machi, 100-130 m alt., Shiretoko Peninsula, E. Hokkaido, Japan, 9-IX-1992, H. ONO & E. SHINKAI leg. (NSMT-Ar 3056); 3♂, same data (NSMT-Ar 3057).

*Clubiona mayumiae* sp. nov.

(Figs. 1-8)

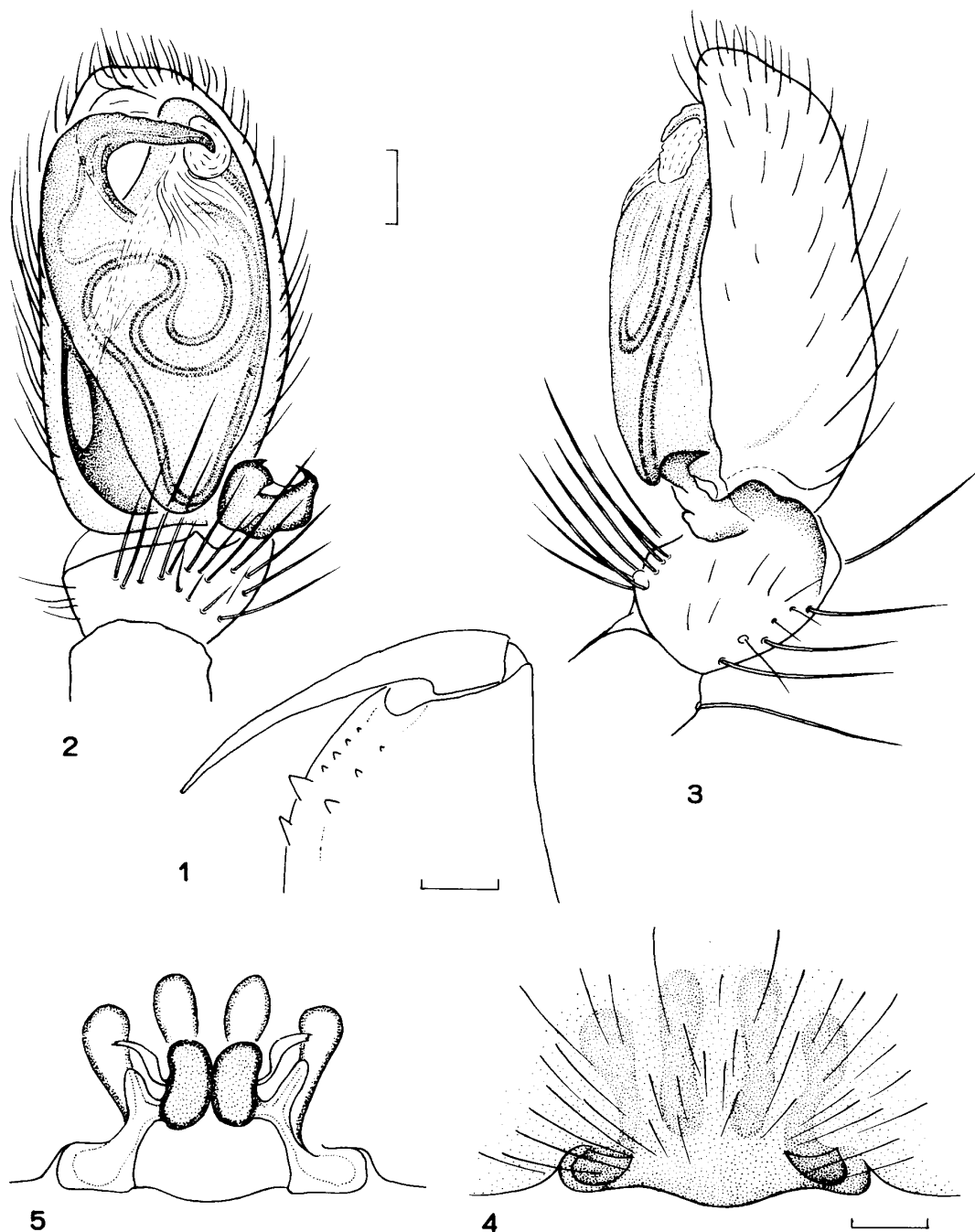
*Clubiona propinqua*: MATSUDA, 1985, p. 28; HAYASHI, 1987, p. 35 [nec *C. propinqua* L. KOCH, 1879].

*Clubiona pseudogermanica*: MIKHAILOV, 1991, p. 219 [nec *C. pseudogermanica* SCHENKEL, 1936].

**Type series.** Holotype: ♂, Kawayu, 130 m alt., Teshikaga-chô, E. Hokkaido, Japan, 8-IX-1992, H. ONO leg. (NSMT-Ar 3058); paratypes: 1♂, same data as for the holotype (NSMT-Ar 3059), 1♂, Numanohara, Daisetsu Mts., Hokkaido, Japan, 29-VII-1986, N. YASUDA leg. (NSMT-Ar 3060), 2♀3♂, Kôgen-onsen, Daisetsu Mts., Hokkaido, Japan, 2-VII-1987, N. YASUDA leg. (NSMT-Ar 3061-3062).

**Description** (based on the holotype ♂ and 1♀ paratype). **Measurement.** Body length ♀ 6.22 mm, ♂ 4.22 mm; prosoma length ♀ 2.48 mm, ♂ 1.85 mm, width ♀ 1.78 mm, ♂ 1.44 mm; opisthosoma length ♀ 3.41 mm, ♂ 2.22 mm, width ♀ 2.07 mm, ♂ 1.10 mm; lengths of legs [total length (femur + patella + tibia + metatarsus + tarsus)]: ♀ I 4.96 mm (1.48 + 0.77 + 1.26 + 0.89 + 0.56), II 5.13 mm (1.63 + 0.81 + 1.26 + 0.89 + 0.54), III 4.78 mm (1.44 + 0.67 + 1.00 + 1.19 + 0.48), IV 7.11 mm (2.07 + 0.85 + 1.56 + 1.96 + 0.67), ♂ I 5.04 mm (1.50 + 0.73 + 1.29 + 0.95 + 0.57), II 5.19 mm (1.53 + 0.72 + 1.42 + 0.99 + 0.53), III 4.59 mm (1.40 + 0.60 + 1.00 + 1.17 + 0.42), IV 6.25 mm (1.83 + 0.64 + 1.43 + 1.77 + 0.58).

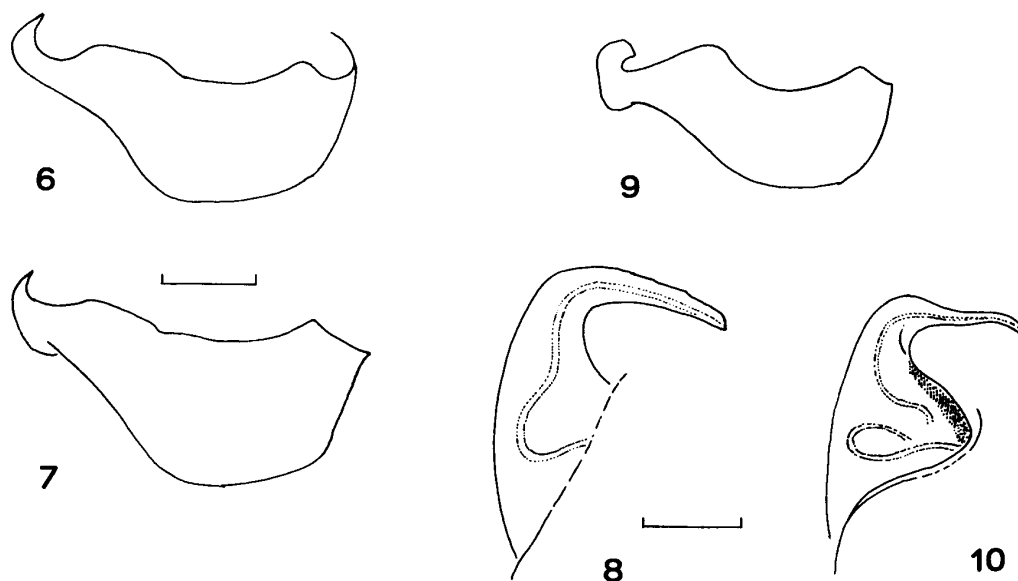
**Prosoma.** Eyes similar in size, anterior lateral eye larger, anterior lateral eye (ALE)/anterior median eye (AME) ♀ 1.11, ♂ 1.05, posterior lateral eye (PLE)/posterior median eye (PME) ♀ ♂



Figs. 1-5. *Clubiona mayumiae* sp. nov.—1, Male chelicera; 2, male palp, ventral view; 3, same, retrolateral view; 4, female genitalia, ventral view; 5, same, dorsal view. (Scales: 0.1 mm.)

1.00, AME-AME/AME-ALE ♀ 1.33, ♂ 2.00, PME-PME/PME-PLA ♀ 1.64, ♂ 1.60, median ocular area wider than long (length/width ♀ 0.63, ♂ 0.75), wider behind than in front (anterior width/posterior width ♀ 0.63, ♂ 0.71), clypeus narrow (clypeus/AME-AME ♀ 0.50, ♂ 0.33). ♀♂ Chelicera normal, with two large and four small teeth on promargin of fang furrow and three relatively small teeth on retromargin (Fig. 1). Scopula present on tarsi and metatarsi I-II.

Spiniformation of legs. ♂ Dorsal spines: femora I-IV 0-1-1-1; prolateral spines: femora I-II, IV 0-0-0-1, femur III 0-0-1-1, tibiae III-IV 1-1, metatarsi III-IV 1-2-2; retrolateral spines:



Figs. 6–10. 6–8, *Clubiona mayumiae* sp. nov.; 9–10, *Clubiona salictum* NAMKUNG et KIM, 1987 (♂ from Okayama Pref., Japan).—6–7, 9, male palpal tibiae, dorsal view (6, holotype; 7, ♂ from Daisetsu); 8, 10, emboli of male palp, ventral view. (Scales: 0.1 mm.)

femora I–IV 0–0–0–1, patellae III–IV 1, tibiae III–IV 1–1, metatarsi III–IV 1–1–2; ventral spines: tibiae I–II 2–2–0, III–IV 1–1–1, metatarsi I–II 2–0–0, III–IV 2–1–2. ♀ Dorsal spines: femora I–IV 1–1–1; prolateral spines: femora I–IV 0–0–1, tibiae III–IV 1–1, metatarsi III–IV 1–2–2; retrolateral spines: femora III–IV 0–0–1, patellae III–IV 1, tibiae III–IV 1–1, metatarsi III–IV 1–1–2; ventral spines: tibiae I–II 2–2, III–IV 1–1–1, metatarsi I–II 2–0, III–IV 2–1–2.

**Male palp** (Figs. 2–3). Retrolateral tibial apophysis developed and strongly sclerotized with uncinated tip. Tegulum relatively wide, seminal duct clearly visible, tegular apophysis not remarkable; conductor small and membranous, embolus rostriform and wide.

**Female genitalia** (Figs. 4–5). Intromittent orifices sclerotized, forming small pockets, situated in the posterior part of epigynum and near epigastric furrow. Intromittent canals very short, extending in anterior direction, atrium digitiform; spermatheca reniform with a digitiform gland.

**Coloration and markings.** ♂ Carapace yellowish white, chelicerae, maxillae and labium yellow, sternum yellowish white, legs light yellow; opisthosoma light beige. The ♂ paratypes from the Daisetsu Mountains have darker coloration and their opisthosomata are pinkish. ♀ Carapace yellowish brown, chelicerae reddish brown, maxillae, labium and sternum yellowish brown, legs light yellowish brown; opisthosoma pinkish brown, venter lighter.

**Variation.** Body length ♀ 6.22–8.23 mm, ♂ 4.07–5.19 mm.

**Remarks.** This new species is closely related to *Clubiona propinqua* L. KOCH, 1879 [redescribed by HOLM (1973) and MIKHAILOV (1991)], *C. pseudogermanica* SCHENKEL, 1936, *C. salictum* NAMKUNG et KIM, 1987 (possibly same as *C. pseudogermanica*), *C. phragmitis* C. L. KOCH, 1843, *C. manshanensis* ZHU et AN, 1988, and *C. yoshidai* HAYASHI, 1989, but can be distinguished from these species by the structure of female genitalia, the shape of embolus and the arrangement of seminal duct in the male palp.

MATSUDA (1985) first recorded this spider from Japan under the name *Clubiona propinqua* on the authority of HAYASHI. Two years later, HAYASHI (1987) described and illustrated it with many

specimens collected in Hokkaido. MIKHAILOV (1991) revised Siberian species of the genus *Clubiona* and pointed out that the spider regarded by HAYASHI as *C. propinqua* was specifically different from the species described by L. KOCH (1879) from Krasnojarsk, Siberia, but could be the same as *C. pseudogermanica* originally described by SCHENKEL (1936) from southern Kansu, China. He described and illustrated both the species on the basis of materials obtained from various places in the Russian Far East including those from Sakhalin and Kunashir Island.

On the other hand, SONG (1982) examined the type specimens (2♂) of *C. pseudogermanica* and synonymized it with *C. propinqua*. Based on this synonymy, HU and SONG (1982) described and illustrated *C. propinqua* with Chinese materials. From Korea, *C. salictum* was described by NAMKUNG and KIM (1987). This was regarded by PAIK (1990) [partly (only ♂)] as a synonym of *C. propinqua*. PAIK also recognized *C. pseudogermanica* as the same species as *C. propinqua*. Other than these, *C. hummeli* SCHENKEL, 1936, originally described from southern Kansu, China, was redescribed by PAIK with Korean specimens, and the female of *C. salictum* described by NAMKUNG and KIM was considered conspecific with this Chinese species. The type locality of *C. hummeli* is the same place as that at which the original specimens of *C. pseudogermanica* was collected.

The present author examined some specimens from Japan which can be identified with *C. salictum* in both the sexes [1♀2♂, Kasaoka-shi, Okayama Pref., 24-V-1992, K. NOJIMA leg. (NSMT-Ar 3063), 1♀, same locality, 25-V-1992, Y. IHARA leg. (NSMT-Ar 3078), 1♀, Atsumi-chô, Atsumi-gun, Aichi Pref., 11-IX-1991, K. OGATA leg. (NSMT-Ar 3079), 2♂, Kodaira-shi, Tokyo, 3-VIII-1984, S. MATSUMOTO leg. (NSMT-Ar 3070), 1♀, Hachioji-shi, Tokyo, 3-X-1991, K. KUMADA leg. (NSMT-Ar 3071)] as well as the paratypes of the species [2♀3♂, Uijeongbu-shi, Kyonggi-do, Korea, 1-XII-1986, J. P. KIM leg. (NSMT-Ar 3072)]. Having compared these with the present materials from Hokkaido, the author recognized two species in Japan which are different in the details of the genitalia of both the sexes, especially in the shape of spermatheca, atrium and gland in the female genitalia and the arrangement of seminal duct, the shape of embolus and tibial apophysis in the male palp (cf. Figs. 6-8 and 9-10; Figs. 4-5 and NAMKUNG & KIM 1987, figs. 6-7).

Since all the synonymies hitherto recorded are not satisfactorily accurate, the author prefers to revive *C. propinqua*, *C. pseudogermanica*, *C. hummeli* and *C. salictum*. Though he has never seen specimens of the *Clubiona* species in question from Russia, China and Korea, it can be safely said that there occur three different species in East Asia: *C. propinqua* distributed in northern Siberia, *C. mayumiae* from northern Japan to the Amur Area, and *C. pseudogermanica* (= *C. salictum* ♀♂ and *C. hummeli* ♀) from southern Japan to Kansu, China.

The new species is dedicated to Mrs. Mayumi MATSUDA, Nukabira, Hokkaido, Japan.

## 要 約

1992年9月、北海道東部で行ったクモ類の採集調査の際に得られたフクログモ属(フクログモ科)の標本を、分類学的に研究した。その結果、北海道新記録のウエノフクログモ *Clubiona uenoi* など計5既知種(ヒメフクログモ *C. kurilensis*, クナシリフクログモ *C. kunashirensis*, ヤガタフクログモ *C. yagata*, エゾフクログモ *C. ezoensis*)を記録し、1新種マユミフクログモ *C. mayumiae* sp. nov. を記載した。この新種と認めたクモは、従来 *C. propinqua* あるいは *C. pseudogermanica* と誤同定されていた種で、そのいきさつとシノニム関係について解説を加えた。

### Postscript

After composing this article, the author examined further specimens of *Clubiona* from eastern Hokkaido collected by Mr. Masaaki TOMOKUNI, Tokyo, to whom many thanks are due. These were identified with *Clubiona yagata* (1 ♀, Harutori, Kushiro-shi, 4-X-1993, NSMT-Ar 3080) and *C. kurilensis* (1 ♀, Mt. Iwahozukiyama, Kushiro-shi, 3-X-1993, NSMT-Ar 3081).

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